problem over the sea. To reach great heights it was necessary to attach to the line or wire a series of kites at intervals, and if no layers of calm air were encountered a very great height could be reached, and the kite kept there by the vessel moving with a speed of not less than seven meters per second. There were many difficulties on board ship due to complications of wind distributions in the different layers. After a season's work with kites in the Atlantic the Prince resolved to try the sounding balloons. The method first adopted was to use two light india-rubber balloons filled with hydrogen. The one carried the self-registering apparatus, while the other and more inflated balloon was attached to it, and aided the ascent to the required height. At this height the upper balloon burst, and the lower balloon with its instruments descended as a balloon-parachute, and hovered over the sea so long as the float at the end of the stray line touched the surface of the water. This could be seen at a distance of 8 or 10 miles. The bursting of the balloon was somewhat indefinite and an improvement was subsequently effected, by means of which the one balloon was released altogether at the desired height. This was done by means of a current from a small dry cell set in action when the pen of the barograph on the lower balloon touched a conductor set at the pressure corresponding to the desired height. Also by use of a formula taken in connection with the observed ascent of the system, the line of descent of the balloon-parachute could be approximately calculated and the ship steered for the place. By means of apparatus of this kind pressure and temperature curves had been brought back from a height of 7500 meters in latitude 78° 55′. In the high latitudes the experiments had been greatly interfered with by fog. The drift of air in still higher regions had been studied by means of pilot balloons, which had been followed through the telescope of a theodolite to heights of nearly 30,000 meters. These indicated that in latitude 80° north, at a height of about 13,600 meters, there were at times winds blowing with a velocity of 60 meters per second, or 130 miles per hour. The results of several cruises had shown that "if the principal states of the world were willing to diminish a little the expense of international quarrels by submitting them to the judgment of a tribunal less costly than that of war, and if they preserved more resources for the veritable interests of humanity, it would be possible with powerful means very soon to know the laws of meteorology, the key to which seemed to be found in the higher atmospheric regions."

FOEHN IN NEW SOUTH WALES.

We are indebted to Prof. Mark Jefferson of Ypsilanti, Mich., for the following reference to a work by John Dunmore Lang, D. D., "An Historical and Statistical Account of New South Wales", London, 1837; vol. 1, page 267, being an account of the great drought of 1827–1829.

Professor Jefferson remarks that the text appears to refer to a foehn wind heated dynamically in its descent from the Blue Mountains to the lowlands on the upper Hunters River. The author does not, of course, recognize it as a foehn—his book is dated 1837—but refers its heat to the interior deserts. It is reported as particularly destructive in a period of three years of drought.

In the year 1828 the failure of the crop in the upper parts of Hunters River, and in certain other districts of the territory, was not attributable to the drought at all, but to blighting northwesterly winds. In the course of that season, when the settlers had a second time begun to despair of their crops, there was a copious and seasonable fall of rain, the almost instantaneous effect of which on the vegetation of the country was truly astonishing. The wheat crop immediately revived and hopes were universally entertained of an abundant harvest. Just, however, as the wheat had got into ear a northwesterly wind, blowing as from the mouth of a furnace, swept across the country and in one hour destroyed many hundred acres of highly promising wheat. As I had occasion to visit the district of Hunters River in the discharge of clerical duty, immediately after this calamitous visitation, I made a few cursory observations on the subject which I embodied in a paper, of which the following is an extract.

"The disease called *the blight* undoubtedly arises from the northwesterly winds, which occasionally blow from the arid regions of the interior of this continental island, and exert a most destructive influence on vegetation of every description wherever they extend. These winds prevail to a greater or less degree every season, but it is only in particular seasons like the present, when, from causes unknown to us, they acquire a higher temperature and blow for longer periods and with greater violence than in ordinary seasons that they prove fatal to vegetation and blast the hopes of the husbandman; and this result will doubtless be accelerated if, as unfortunately happened this season, the vegetation is of that peculiar character which it uniformly acquires in a warm climate when heavy rain succeeds a long continuance of drought".

After pointing out the value of wind-breaks, even of common rail fence to a limited extent, Doctor Lang goes on to point out the exemption of that part of the Hunters River country nearer the sea. He states that it appears:

That in that [coastal] part of the district the blighting influence of the northwest winds is almost entirely counteracted by the proximity of the ocean, and the consequent diminution of temperature which that proximity must occasion. This result, however, is not produced by the mere mechanical effect of the sea breeze, which generally alternates with the land wind along this coast during the summer months; for when the northwest wind blows with sufficient violence to occasion blight in the interior, there is no sea breeze on the coast: but the ocean not only cools the atmosphere above itself, but refrigerates the air, counteracts the noxious influence of the land wind, and promotes vegetation to the distance of about twenty-five miles on [*from*] the coast.

If it should be asked, however, why the districts of Bathurst and Argyle are less subject to blight than the upper part of Hunters River, it may be stated in reply that the Argyle country is two degrees farther to the southward, and consists in great measure of elevated table land, situated within a moderate distance of the coast. The plain of Bathurst, on the other hand, is 2000 feet above the level of the sea, while the upper part of the district of Hunters River is almost on a level with the ocean.

These last sentences seem to establish the foehn character of the wind, it being without injurious effect on the highlands—Bathurst and Argyle—because it is not there a descending wind. It would be interesting to know whether it has been observed since. The drought was believed to have been the greatest in a generation.

THE HEAVIEST LOCAL RAINFALLS IN CALIFORNIA.

In the climatological report of the California section for February, 1907, is published a list of California stations having very large annual rainfalls. Most of these occurred during the year 1906, but a few in 1904. Concerning this table Professor McAdie remarks that while these amounts are very large they do not break the record for the greatest annual rainfall nor the greatest monthly rainfall in the State—which were, respectively, 137.58 inches in 1902, and 62.24 inches in February, 1902, both at the station Helen Mine, Lake County. Professor McAdie gives credit to Mr. George H. Willson, Local Forecaster at San Francisco, for the preparation of this table:

Stations.	1906.	1905.	1904.	Normal.	Length of record.
Helen Mine	129.69	68.03	114.72	93.51	6
Woodleaf	125.41	.....	.....	.....	1
Stirling City	125.08	44.02	.....	.....	3
Magalia	125.01	48.16	94.40	.....	3
LaPorte	124.46	.....	.....	78.08	13
Fordyce Dam	120.64	43.16	.....	.....	.....
Monumental	116.13	69.30	.....	.....	2
Bear Valley (Nevada County)	110.85	46.93	103.59	.....	.....
Pilot Creek	110.61	42.56	93.99	.....	.....
Brush Creek	106.25	50.63	91.98	.....	3
Blue Canyon	104.21	46.65	93.48	64.05	8
Nimshew	104.00	43.11	.....	.....	3
Branscomb	99.08	55.03	115.07	93.48	7
Emigrant Gap	98.15	40.10	.....	51.72	33
Bowman's Dam	97.45	64.49	135.70	.....	.....
Summerdale	95.25	36.80	61.22	48.80	11
Tamarack	94.35	.....	.....	.....	1
Georgetown	93.22	35.77	79.37	57.10	34
Crockers	90.62	35.30	.....	.....	3
Grass Valley	87.22	.....	.....	.....	.....
Boulder Creek	86.36	43.78	67.51	.....	.....
Iowa Hill	85.72	33.42	67.87	52.19	26
Upper Mattole	85.70	70.04	126.49	81.66	19
North Bloomfield	85.32	41.74	73.60	53.52	10
Gold Run	85.24	32.22	76.20	51.26	8
Colfax	85.21	.....	70.59	46.64	36
Nevada City	82.72	36.91	68.64	55.79	15
Zenia	82.21	46.92	105.87	78.76	5
Ben Lomond	81.64	45.51	67.87	.....	.....
Mount Saint Helena	81.54	49.89	92.87	.....	5
Blocksburg	80.84	.....	.....	.....	3
Towle	82.14	43.23	.....	51.68	21
Delta	79.40	52.66	90.31	60.10	22
Laurel	79.06	38.00	64.87	.....	.....
Shasta	70.93	44.52	75.76	49.90	11
Crescent City	70.27	50.91	107.61	70.28	13
Fort Ross	69.77	49.63	85.38	50.70	14
Glenwood	69.25	.....	.....	.....	.....
West Point	68.58	26.07	58.20	.....	.....
Quincy	66.92	.....	61.42	43.15	12
Greenville	66.45	24.26	61.74	40.87	13
Felton	64.17	37.06	54.14	.....	.....
Mercury	62.93	42.54	73.11	.....	3
Butte Valley	62.26	48.90	86.00	.....	3
Cuyamaca	59.91	66.10	26.81	33.32	8